



Surface Water Protection Program

Bioassessment: A Method to Assess Impacts of Pesticides on Water Quality in the San Joaquin Valley



The Department of Pesticide Regulations mission is to protect human health and the environment by regulating pesticide sales and use. One goal of the Surface Water Protection Program is to prevent the movement of pesticides to rivers and streams. With bioassessment, short for *biological assessment*, we can measure pesticide impacts to a stream. Bioassessment examines the physical habitat and the organisms in a water body. This helps determine the current condition of the stream. Using many organisms instead of just one species lets us better determine the health of a stream.

Some of the habitat features that are examined include stream flow and vegetation in and around the stream. The organisms that are looked at are mainly aquatic insects. Other organisms include worms and snails. Insects are used because they are found just about

everywhere. They also complete the majority of their life cycle in water and are rather immobile.

These organisms are affected by changes in a stream's chemical and physical makeup. The various species and population sizes found reflect the overall health of that location.

Reference sites are sections of streams that are considered ideal for a specific region. These sites range from a pristine, undisturbed section of a stream to "best available" sections. In the San Joaquin Valley current land uses and water diversions limit the ability to find minimally disturbed sites. Here, reference sites will most likely be "best available" sites.

Reference sites are used to compare other sites within the same region. They are also used to understand biological data that may have been impacted by pesticides.



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